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Model No. 2000CL-SX (& 2000CL-SX-T)

200 CLIP INSTANT ACCESS SYSTEM

SONY SX PROTOCOL

FOR SONY SX HYBRID RECORDERS

USER MANUAL

Table of Contents

Manual Version.....…..... 2.3 110303
Document No.....….....2000CL-SX User Manual

1. REVISION HISTORY

091703	2.2	Company header information revised.
110303	2.3	Added DNF Controls Limited Warranty. Added TRANSFERRING A CUELIST Section.

2. SYSTEM DESCRIPTION

The 200 Clip Instant Access System consists of the ST300-SSM VTR Controller, STS320 Shotbox and Shotlist Software. The Video Server must support SONY SX Protocol.

SHOTLIST provides instant access to existing video clips stored on SONY SX Protocol storage devices. The SHOTLIST contains up to 200 CLIP IDs, stored in non-volatile memory in the ST300.

Remotely view the CLIP IDs that exist in the DDR under control. Desired clips can be MARKed into the SHOTLIST, at a single location or at multiple locations.

Any clip in the SHOTLIST can be quickly loaded by simply entering the associated 3 digit number of its location, then pressing [**LOAD**]. Press [**PLAY**] to play the clip. Press [**RECUE**] to recue to the beginning of the clip or to the "recalled" time if defined.

DEFINITIONS

- Throughout this document, Video Server refers to the hard disk drive in the SX unit.
- The ST300-S/SM as the ST300.
- The ST320SHOTBOX is referred to as "SHOTBOX."
- SHOTKEY refers to the 1-50 switches on the SHOTBOX
- Words surrounded by brackets, for example, [**ENTER**], are keys on the ST300 or the SHOTBOX. [**XXX**] + [**XXX**] means hold the two keys down simultaneously.
- "Softkeys" are the row of keys directly below the display that perform multiple functions in Menu and other modes.
- HDD refers to the hard disk drive video recorder in the SX device.

3. SYSTEM INSTALLATION

SHOTBOX

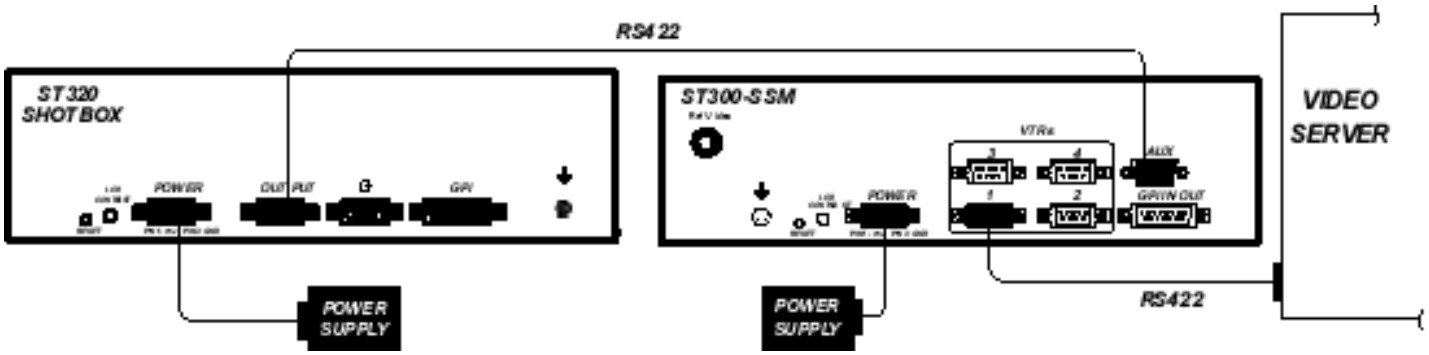
1. Plug one end of a standard 9 pin, RS422 serial cable into the OUTPUT connector on the rear of the SHOTBOX. Plug the other end of the cable into the AUX connector on the rear of the ST300.
2. Connect the 5 VDC, 1Amp POWER SUPPLY into the POWER connector on the rear of the SHOTBOX. Plug the Power Supply into an outlet, 90VAC - 240 VAC.

ST300-S/SM, VTR/DDR CONTROLLER

1. Plug one end of a 9 conductor, RS422 serial cable into the 9 pin connector (VTR 1, VTR 2, VTR 3 or VTR 4) on the rear of the ST300. Plug the other end of the cable into the 9 pin remote connector on the Video Server.
2. Connect the +5, +12, -12 VDC POWER SUPPLY into the POWER connector on the rear of the ST300. Plug the Power Supply into an outlet, 90 VAC - 240 VAC.
3. Check SETUP MENU prior to using the ST300 to confirm proper Record mode and other User settable modes.

Installation is complete.

CONNECTION DIAGRAM



4. VIDEO SERVER SETUP

1. On the ST300: VTR1 is always the HDD. VTR2 is always the tape.
2. When you switch to “Local” mode on the SX, the SX goes to the beginning of the first clip on the list
3. Clips loaded from the front panel of the SX will not be Learned or displayed on the ST300 or the SHOTBOX.
4. The SONY DNW unit must have the following or higher software versions:
   1.) SY1-3.22; SY2=3.22:SSX=3.20:SV1=3.20

   2.) DNW extended menu item 210:DiskProtcl must be V1.0 (Load errors occur otherwise).
5. Assuming DNW PLAYER=TAPE, RECORDER=DISK MASTER:
   1.) ST300/VTR 1 disk operation.
   DNWPB/EE enabled: TC Reader display is from tape when VTR EE mode is active. During disk PB, TC reader display is from DISK MASTER. Refer to DNW extended menu item 108 AUTO EE SELECT.

   DNW PB enabled: TC Reader display is from DISK MASTER only.

   2.) ST300/VTR2 tape operation: TC reader display is from tape regardless of DNW PB/EE selection.
6. SETUP MENU/RECORD MODE. Crash and Lockout are the only modes supported. Hybrid cannot perform INSERT Edit to either TAPE or DISK MASTER.

5. SETUP MENU

1. Press [**MENU**]. The MENU indicator will turn on.
2. Turn the Wheel to select item to change.
3. Press [**MENU**] **OR** use the Softkeys to change the desired mode for that option.
4. Turn the Wheel at anytime to select another item.
5. Press [**ESC**] at anytime to exit. The MENU indicator will turn off.

MENU MODES: **(Turning Wheel clockwise)**

RECORD Press [**MENU**] to select the desired record mode: Lockout, Crash (Full).

WIND MODE Press Softkey to select:
HOLD (fast wind is maintained only while key is pressed)
OR
LATCH (fast wind is initiated and maintained with momentary key press)
Select fast wind speed (3.9 to 23.7) by pressing Softkey below SPD.

SLOMO ST300 display shows:

SLOMO with:		WHEEL
TBAR	Speed	Prset

Press Softkey [***TBAR***] (or [***WHEEL***]) to toggle between them.

NOTE - The T-BAR has a speed range of 0➔+200 with a detent at +100 % play speed **OR** 0 ➔ 100

For Wheel only:
Press Softkey [***SPEED***] to select SLOMO speed ranges:
Press Softkey to select: 0 ->+200 **OR** -100 -> +200.
Press Softkey [***BACK***] to return to SLOMO MENU.
Press [**ESC**] to exit **OR** turn the Wheel to select another item.

For Wheel only:
Press Softkey [***PRSET***] to select the SLOMO Preset Speed Mode
Press Softkey [***UPDATE***]
When exiting SLOMO mode, the last used speed is saved in the Preset Speed register.
Press Softkey [***STATIC***]
The Preset Speed register is NOT updated when exiting SLOMO mode
It is only changed by [**SHIFT**] + [**SLOMO**] (PRESET SLOMO).

SEARCH SPEED Press Softkey to select ST300 or VTR to control the search speed of the VTR. (Determine which mode will be faster)

HINT: Select VTR mode if you will be controlling multiple VTRs.
Select ST300 if you will be controlling older VTRs

ST300 SETUP

ST300 SETUP	
Clear Cues	SetDefault

Press Softkey beneath ClearCues to clear all Cue Points to 00:00:00:00.

Press Softkey [***YES***] when asked "Are You Sure?"

Press Softkey beneath SetDefault to set ST300 to default settings.

Press Softkey [***YES***] when asked "Are You Sure?"

DISPLAY SOFTWARE VERSION The version number for the currently installed software is displayed.

DROP FRAME Press Softkey to select DROP FRAME ON or OFF.
Used in conjunction with Timecode Generator preset.

RECORD Press Softkey to select single button or 2 button record.
RECORD = [**REC**] Only **OR** [**REC**] + [**PLAY**]

FREEZE Press Softkey to enable or disable FREEZE at Record OUT point.
Changing mode automatically clears FREEZE point.

SHOTBOX Press Softkey to Select SHOTBOX On or Off.

6. CREATE NEW CLIPS

1. Press [**CLIP LIST**]. The CLIP LIST indicator will turn on.
   The display will show "CREATE NEW CLIP'.
2. Press [**LOAD**] to create a new clip.
   The display will show: "Enter New Clip Name".
3. Enter numeric CLIP ID, up to 8 characters, using the numeric keypad.
4. Press [**LOAD**] to create the selected CLIP ID.

7. LOAD A CLIP

1. Press VTR [**1**], VTR [**2**], VTR [**3**] or VTR [**4**].
2. Press [**CLIP LIST**]. The CLIP LIST indicator will turn on.
3. Turn the Wheel. The top line of the display will show "CLIP ID."
   The bottom line of the display will show "xxxxxxxxxxxxxxxxxxx:",
   where "xxxxxxxxxxxxxxxxxxx" is the 20 character CLIP ID.
   The CLIP ID can contain up to 24 characters. The display on the ST300 is capable of displaying a maximum of 20 characters. If a CLIP ID is loaded with more than 19 characters, the last character is a "➔".
4. Turn the wheel to scroll through the list of available CLIPs.
5. Press [**LOAD**] to load the desired clip.
   Once a clip is LOADED, it can be LEARNED on the SHOTBOX **OR** the ST300.
6. Locate the clip to the desired IN time.
7. Press [**ESC**] at anytime to exit CLIP LIST.

8. LEARN ON THE ST300

1. Select the desired Cue Point by pressing [**NEXT CUE**], [**LAST CUE**] or by manually entering the Cue Point using the numeric keypad.

   The selected Cue Point number is shown on the bottom line of the display.
2. Press [**SHIFT**] + [**MARK**] to initiate the LEARN.
3. The display will show:

Press VTR:	
MARK-Lrn	ESC-Cancel

4. Press the VTR key desired, [**1**],[**2**],[**3**] or[**4**].
5. Press [**MARK**] and the ST300 will: LEARN (save) the VTR Number (1,2,3,4), loaded CLIP ID and current IN time to the selected Cue Point.

9. LEARN ON THE SHOTBOX

1. Press [**LEARN**]. The LEARN indicator will turn on.

   The display will show:

   ```
   Select Bank  & Switch
   STOP- Abort
   ```

2. Select the desired BANK and ShotKey.
3. The SHOTBOX will: LEARN (save) the loaded clip(s), current IN time and gang configuration of the active VTR(s).
4. Press [**STOP**] to exit at anytime.

10. RECALL ON THE ST300

1. Select the desired Cue Point by pressing [**NEXT CUE**], [**LAST CUE**] or by manually entering the Cue Point using the numeric keypad.

   The selected Cue Point number is shown on the bottom line of the display.

2. Press [**LOAD**] on the ST300.

   The ST300 will automatically load the Learned clips on the Learned VTRs, cue the clips to the Learned time, then set the Learned GANG mode.

11. RECALL ON THE SHOTBOX

Select the desired Cue Point by pressing the bank and the switch key.

12. SHOTBOX DISPLAY

If the current active VTR on the ST300 is VTR1,
the Shotbox display shows:

```
V:1  L:  xxxxxxxx
```

where xxxxxxxx =
clip, loaded on VTR1

13. SHOTBOX SHOTKEY MAPPING TO SHOTLIST LOCATIONS

The SWITCHES on the SHOTBOX access the SHOTLIST locations as follows:
BANK 1, SWITCHES 1 -> 50 access SHOTLIST locations 101 -> 150.
BANK 2, SWITCHES 1 -> 50 access SHOTLIST locations 201 -> 250.
BANK 3, SWITCHES 1 -> 50 access SHOTLIST locations 301 -> 350.
BANK 4, SWITCHES 1 -> 50 access SHOTLIST locations 401 -> 450.

14. VIEW CONTENTS OF CUE POINT ON THE SHOTBOX

1. Press and hold [**VIEW**].
2. Select a Cue Point by pressing desired bank and switch keys.
   The display will show:

VT1 xxxxxxxx

   Where "xxxxxxxx" is the CLIP ID assigned to the selected Cue Point on VTR1.

15. SHOTBOX CONTROL SWITCHES

These keys control the VTR selected by the ST300 or the last "recalled" VTR

1. Pressing [**PLAY**] puts the VTR into PLAY mode.
2. Pressing [**STOP**] puts the VTR into STOP mode.
3. Pressing [**RECUE**] stops the VTR and rewinds back to the start of the clip or the LEARNED time.

The CONTROL SWITCH indicators show the real-time status of the VTR.

16. TRANSFERRING A CUELIST

The TRANSMIT CUELIST function allows you to transmit your list of Cue Points to a PC, using the available utility software on the PC, or to another ST300. Transfer to a PC requires OpSuite 3.0 software, which runs on a Windows-based computer. Contact DNF Controls for more information.

TO TRANSMIT CUE POINTS TO THE ST300:

1. Connect the VTR 4 connector on the rear of the ST300 to the VTR4 connector of the receiving ST300 using an RS422 9-pin cable with TX and RX lines crossed. (A "turnaround" cable)
2. Press [**MENU**].
3. Scroll the Wheel until "Transmit CUE List? YES=Enter, Exit=ESC" is displayed.
4. Press [**ENTER**] to start transmitting.
   The Display shows "Waiting to transmit" on the first line.
5. When the Receiver is ready, transfer starts automatically.
   The Display now shows "Transmitting cuelist".
6. After the transfer is over the display shows "Transfer is over" for one second
   Then shows "Waiting to transmit" again.
7. Connect another ST300 to transmit the list again,
   OR
8. Press [**ESC**] twice to exit the MENU mode.

TO TRANSMIT CUE POINTS TO THE PC:

1. Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using a RS422 to RS232 adapter.
2. Repeat steps 2-8 of the TRANSMIT CUE POINTS to the ST300 section.

RECEIVE CUELIST FUNCTION.

The RECEIVE CUELIST function allows you to receive your list of Cue Points from a PC or from another ST300. Transfer to a PC requires OpSuite 3.0 software, which runs on a Windows-based computer. Contact DNF Controls for more information.

TO RECEIVE CUE POINTS FROM THE ST300:

1. Connect the VTR4 connector on the back of the ST300 from the VTR4 connector of the transmitting ST300 using RS422 9-pin cable with TX and RX lines crossed. (A "Turnaround" Cable)
2. Press [**MENU**].
3. Scroll the Wheel until "Receive CUE List? YES=Enter, Exit=ESC" is displayed.
4. Press [**ENTER**] to start receiving.
   The Display shows "Waiting to receive" on the first line.
5. When the Transmitter is ready, transfer starts automatically.
   The Display now shows "Receiving cuelist".
6. After the transfer is over the display shows "Done-Success! Press any key…"
7. Press any key. The display shows "Receive cuelist?" message.
8. Press [**ESC**] to exit the MENU mode.

TO RECEIVE CUE POINTS FROM THE PC:

1. Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using RS422 to RS232 adapter
2. Repeat steps 2-8 of the RECEIVE CUE POINTS from the ST300 section.

Reference . . .

17. FUNCTION TABLE

Function	Key Press	Description
GOTO ENTERED TIME	[**SHIFT**] + [**RECUE**]	Search the VTR to the manually entered time **OR** use the ST300 numeric keypad, then press [**ENTER**] or [**RECUE**].
FFWD	[**FFWD**]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
JOG	[**JOG**]	Select JOG mode and enable Wheel.
LAST CUE	[**LAST CUE**]	Step to the previous Cue Point Location.
NEXT CUE	[**NEXT CUE**]	Step to the next Cue Point Location.
RECORD	[**REC**]	Places VTR into the Record mode selected by RECORD MODE in the SETUP MENU. Press [**RECORD**] or [**RECORD**] + [**PLAY**].
REWIND	[**RWD**]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
SHUTTLE	[**SHUTTLE**]	Select SHUTTLE mode and enable Wheel.
SLOMO	[**SLOMO**]	Press [**SLOMO**] to slo-mo the VTR. Turn the wheel (or move the T-Bar if available) to change the play speed. Press [**SLOMO**] to STILL frame **OR** press any transport key to exit SLOMO.
SLO-MO SPEED PRESET	[**SHIFT**] + [**SLOMO**]	For WHEEL **ONLY**: Press [**SHIFT**] + [**SLOMO**] to preset the slo-mo speed. Turn wheel to select desired speed. Press [**ESC**] or any transport key to exit.
STOP	[**STOP**]	Press once to STILL frame VTR. Press again to put VTR into STOP mode.
TIME MODE SELECT	[**TIME MODE**]	Press to toggle between Timecode (TC), VITC (VT) or Tape Timer (TM) display modes.

18. SPECIFICATIONS

ST300

Power:	90 VAC to 265VAC adapter supplied with IEC connector
Size:	(L" x W" x H") 12" x 6" x 1.5" (front) 3.0" (rear)
Weight:	4 lbs.
Rear Panel Connectors:	VTR1, VTR2, VTR3, VTR4..... All DB9F
	GPI..... DBF15F
	Power.....DB9M
	Aux DB9F
Display:	Easy to read 2 line, back-lit LCD display (User adjustable contrast)
Jog/Shuttle Wheel:	With mechanical detents.
Optional "T"-bar:	Slo-mo 0-200% of Play Speed

RS422 SERIAL CONNECTOR 9 Pin D type, female

Pin #				
	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Transmit Common	9	Frame Ground
	5	Spare		

POWER CONNECTOR 9 Pin D type, male

Pin #				
	1	+5v DC	6	+5 VDC
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	+12 VDC	9	Ground
	5	–12 VDC		

ST320 (SHOTBOX)

Power:	90 VAC to 265VAC adapter supplied with IEC connector
Size:	(L" x W" x H") 10.5" x 7.25" x 1.75" (front) 3.0" (rear)
Weight:	4 lbs.
Rear Panel Connectors:	Power DB9M
	OUTPUT.....…..... DB9F
Display:	Easy to read 2 line, back-lit LCD display
	(User adjustable contrast)

RS422 SERIAL CONNECTOR 9 Pin D type, female

Pin #				
	1	Frame Ground	6	Transmit Common
	2	Transmit A ➔	7	Transmit B ➔
	3	Receive B ➔	8	Receive A ➔
	4	Receive Common	9	Frame Ground
	5	Spare		

POWER CONNECTOR 9 Pin D type, male

Pin #				
	1	+5v DC	6	No Connection
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	No Connection	9	Ground
	5	No Connection		

19. DNF CONTROLS LIMITED WARRANTY

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls
12843 Foothill Blvd., Suite D
Sylmar, CA 91342
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services at prices listed in the DNF Controls Price List. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

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